



# Safety Smarts

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## Revised Confined Space Program

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Respiratory Protection  
First Responder Awareness  
Dealing with Chemical Spills

This is an informational publication for City of Tempe employees. If you have comments or suggestions please contact the Environmental, Health and Safety Group.

The City of Tempe is required by OSHA to develop a written program that addresses how to work in a confined space. This program is required to be reviewed annually and updated whenever changes to the law or internal operations occur.

Minor revisions were made to the plan in January 2001.

In August of 2002 a major revision of the plan was initiated. Scott Mosley the

City of Tempe, Industrial Hygienist and Program Administrator said, "This has been a very intensive and comprehensive update involving every work group in the City."

OSHA requires that employees be given the opportunity to have input into the development of the written program. "All City of Tempe Department Managers and Supervisors have been apart of the final review of

the plan," Mosley said. The purpose of the plan is to provide guidance for all employees who enter into confined spaces by establishing minimum safe entry procedures.

Requirements for the written plan are defined in 29 CFR 1910.146, Permit Required Confined Spaces for General Industry.

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## City Generated Hazardous Waste...

Improperly handled hazardous waste can lead to serious EPA citations, which include monetary fines and even jail time.

According to David Tavares, City of Tempe Hazardous Materials Supervisor, "What typically happens in a government setting is an individual disposes of a material in an effort to save time or money." The EPA has very stringent laws in regards to the disposal of hazardous

waste. Hazardous waste cannot be disposed of into normal solid waste containers or down drains.

Hazardous waste regulations includes specific storage requirements, labeling, documentation and inspections just to list a few of the many rules. Any waste disposed of must be tracked from cradle to grave. "Cradle to grave is a term which means that a waste must be tracked from its point of

generation to the final place of disposal," Tavares said. A tremendous amount of paperwork is generated for each shipment of hazardous waste. Hazardous waste manifests must be signed by the generator, transporter and disposal site. Copies are then returned to the generator and the Arizona Department of Environmental Quality (ADEQ).

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## Hand and Powered Tools

Under 29 CFR 1910, Subpart P, *Hand and Portable Powered Tools and Other Hand - Held Equipment*, OSHA requires employers to train employees in the proper use and limitations of equipment. Employees should be able to recognize the hazards associated with tools and all other applicable safety precautions.



There are five basic rules that can help prevent hazards associated with the use of hand and power tools.

- Keep all tools in good condition with regular maintenance.
- Use the right tool for the job.
- Examine each tool for damage before use and do not use damaged tools.
- Operate tools according to the manufactures' instructions.
- Provide and use properly the right personal protective equipment.

## The Heat Is On

*"It is a sad fact that before the summer is over more people will have lost their lives."*

The human body, being warm blooded, maintains a fairly constant internal temperature, even though it is being exposed to varying environmental temperatures. To keep internal body temperatures within safe limits, the body must get rid of its excess heat, primarily through varying the rate and amount of blood circulation through the skin and the release of fluid onto the skin by sweat glands.

These are automatic responses controlled by the brain.

As environmental temperatures approach normal skin temperature, cooling of the body becomes more difficult.

If you have experienced just one summer here in the Valley, you understand the workings of the body in its efforts to cool you down.

As temperatures begin to rise, it is a sad fact that before the summer is over more people will have lost their lives under the hot Arizona sun.

Many job duties require employees to work outside in the heat throughout the course of the day. Education on the prevention of heat related illnesses is the best form of protection.

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## Hearing Conservation



Noise induced hearing loss occurs as a result of impulse, impact noises, continuous noise sources such as lawn mowers, pumps and air driven equipment. Noise induced hearing loss typically occurs gradually with the no obvious symptoms

detected by the employee. Noise induced hearing loss will result in permanent, irreversible loss of hearing.

Employees who work in areas where noise levels equal or exceed an eight-

hour time weighted average (TWA) "Action Level" of 85 dBA or employees who are exposed to impact noise of 140 dBA are required to be included in the City of Tempe, Hearing Conservation Program.

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## Confined Space (continued from Page 1)

"It is very important that employees know what confined spaces are," Mosley said. A confined space is:

1. Has limited or restricted means for entry or exit; AND
2. Is large enough and so configured that an employee can bodily enter and perform assigned work; AND
3. Is not designed for continuous employee occupancy.

It is important to remember that to be a confined space; it must have all three characteristics listed above.

If a space only has one of the three, it does not meet the definition a confined space.

While it is important that employees know what makes a space a confined space, it is just as important to know that only the City of Tempe, Confined Space, Program Administrator can make the final decision.

The Program Administrator is Scott Mosley.



Why is the Program Administrator the only person that can make this decision?

Confined Spaces typically have more than just one hazard. According to Scott Mosley, "Spaces can have fall hazards, electric hazards, atmospheric hazards that may be covered by other OSHA Standards."

To make things even more complex once a confined space is identified, it then must be assessed to determine if it is a Permit Confined Space. A Permit Required Space is:

1. Contains or has a potential to contain a hazardous atmosphere, which include: OR
2. Contains a material with the potential for engulfment of an entrant; OR
3. Has an internal configuration so that an entrant would be trapped or asphyxiated by inwardly converging walls, or a floor which slopes downward and tapers to a smaller cross-section; OR
4. Contains any other recognized serious safety or health hazard

(e.g., mechanical, heat, humidity, noise, electricity, moving parts of machinery, biological, fall hazards, etc.)

Employees must have training before they can enter or participate in a confined space entry. According to Scott Mosley, "more would be rescuers die attempting to help co-workers." Training is not just a City requirement. OSHA requires employees that enter confined spaces to be trained and understand the permitting system. "A Permit is the mechanism to control every aspect of an entry," Mosley said.

Supervisors who have employees who enter spaces are responsible for notifying the Program Administrator so an assessment can be performed. An assessment takes very little time and "provides the Supervisor with written documentation on a specific space," Mosley said.

If you have a space you want assessed, contact the EH&S Group. More information on confined spaces is available at our web site at:

<http://www1.tempe.gov/hpcc/eh&s/cspmain.htm>



## Fatal Mistakes (From ADOSH ADVOCATE - By Ernie Miller, ADOSH Compliance Officer)

Every year, employees die from heat exposure, heat related stress and dehydration. Arizona is not “user friendly” in this area, and with the coming of warmer weather, we would like you to remember what heat can do to a human body. Simply stated, it can kill.

Two employees performing an aluminum spin casting job, were working in reflective aluminized foundry protective suits, gloves and hoods to protect them from being splashed in the event of a rotating mold fracture during the aluminum mold pouring. The molten aluminum, carried in a crucible with a temperature approaching 1,300 degrees Fahrenheit, was to be poured into the rotating mold. This work was being performed in a shed structure outside the main plant, with no ventilation other than the ambient breezes. The shed was open on three sides and had two small exhaust fans on the roof to remove fumes. Ambient temperature outside the day, according to the Weather Bureau, was 100.4 to 102.02 during the mid-day hours this work was performed.

This work was originally scheduled for the cooler morning hours, but was delayed until some parts for the molds were completed. The entire process took slightly over three hours to complete, at the peak of the days heat. Work proceeded with breaks of about 45 minutes between pours. The employees rested at the work site, rather than enter the air-conditioned building, in their words, “to keep from getting chills.” Their clothes were soaked with perspiration, and both employees were seen to be perspiring profusely. During their “break” both employees removed their long sleeve jacket, the hood and their gloves, but did not remove their reflective trousers or splash boots. They cited the effort required putting on the trousers and boots as being too much when sweaty and wet as the reason for not removing this restrictive, hot clothing during the break. Plenty of cold water and Gatorade were available to the employees during work and breaks.

Upon completion of the job, one employee removed his protective gear, stumbled into the building, negotiated several doors, and collapsed in a hallway outside the mens room. Emergency procedures revived him temporarily. He became agitated and non-cooperative for a brief period, and then collapsed. While he was transported to the hospital, he failed to respond to emergency treatment, and was pronounced dead at the hospital. The cause of death was hyperthermia.

The heat exposure in this case is not uncommon, though the process involved is somewhat unique. Even though the protective clothing is required to protect the employee, wearing it can present additional hazards or dangers. Care must be taken to prevent the employee from suffering hyperthermia as well. Employees who are not wearing protective clothing are also at risk for hyperthermia. Working any outside job during the summer in Arizona can cause heat related illness and death. Care must be taken to protect employees from the stress. Not all employees are equal in what they can tolerate. Judgment and close observation must be part of the protective system for heat-exposed employees. Just having water available is sometime not enough.

Training, understanding for employees tolerance levels, and close observation are all good means of preventing heat related employee deaths. Engineering controls, such as removal of the heat exposure where possible (ice pack vests worn under the protective clothing are an example), or management controls, such as limiting exposure time per person or rescheduling for cooler time periods are also good controls. Just be sure to do the right things to keep all employees protected from heat stress during the coming warmer weather.

***While there is no specific OSHA regulation that addresses working in hot environments, the General Duty Clause requires the employer to provide a safe work place for each employee. If you have any questions or need assistance with engineering controls contact the EH&S Group.***



## Hazardous Waste (Continued from Page 1)



A failure to provide ADEQ with documentation on any City “owned” or hazardous waste is at a minimum a citation.

An organization that disposes of a waste must obtain an EPA identification number. “In some instances a one time number can be issued provided the waste will not be re-generated over the course of the year,” Tavares said. Identification numbers are issued to individual sites not organizations or groups. The City of Tempe currently has over ten facilities that have identification numbers.

“The amount (weight) that is disposed of is very important to track,” Tavares said. Site classifications are given based on the weight. “Different regulations apply to each classification,” Tavares said.

There are specific storage requirements for large quantity generators and

Conditional Small Quantity Generators (CESQG). Failure to understand and follow these guidelines can result in monetary fines and a public relations nightmare.

Some materials may not be hazardous waste, but may be classified as a non-hazardous waste, universal waste or a special waste.



Examples include used motor oil, fluorescent light bulbs and petroleum contaminated solids. Tracking the disposal of these waste materials is just as important. Maintaining all disposal records is essential to compliance. Records must be maintained with the generator.

To ensure that waste material transported off-site for disposal is performed correctly, the EH&S Group does not pay the disposal company until a certificate of disposal is

received. “The certificate of disposal (COD) is a document that states the material has finally met the grave,” Tavares said.

Paying before receiving the COD can be compared to purchasing new car years before you take ownership of it.

If you generate a waste and you would like some assistance in determining the proper storage and disposal requirements, contact the Environmental, Health and Safety Group.

“We will come out and assess the waste and ensure that you are in compliance with labeling, storage and disposal requirements,” Tavares said.

The EH&S Group will even package your waste in accordance with EPA, ADEQ and DOT requirements. Individual groups and Departments are strongly encouraged to call for assistance before shipping any hazardous waste.



## Heat is on... (Continued from Page 2)

It is important that any employee who works in the heat receives training on the causes, outcomes, symptoms and prevention methods for heat related illnesses. Training is one of the simplest and best ways of prevention. Here are some basic items to be on the lookout for:

- Hot, dry, red or spotted skin
- Clammy and moist skin
- Mental confusion
- Weakness or fatigue
- Headache
- Cramps

For more information on Heat Related Illness training contact John Higuera at 350-2640

## Hearing Conservation (Continued from Page 2)

*“There is only one way to know if you or your employees work in high noise areas....”*

The City is required to provide training to all employees who may enter high noise areas.

Training ensures that employees understand, the effects of noise on hearing; the purpose of hearing protective devices; the advantages, disadvantages and attenuation of various types of hearing protective devices; proper selection, fitting, use, and care of

hearing protective devices; the purpose of audiometric test procedures; and explanation of audiometric test procedures. Training and audiometric testing must be performed annually.

There is only one way to know if you or your employees work in high noise areas, have a noise assessment performed.

The process is simple and takes only a few minutes. In some situations an employee may be asked to wear a dosimeter for their work shift to determine the TWA.

To have an assessment performed: contact Scott Mosley at 350-8877. The table below identifies the noise level and length of exposure.

<u>Duration (hrs/day)</u>	<u>Dose (%)</u>	<u>Sound Levels (dBA)</u>
8**	33	85
8	100	90
6	100	92
4	100	95
3	100	97
2	100	100
1.5	100	102
1	100	105
0.5	100	110
0.33	100	112
0.25	100	115

\*\* 85 dBA/8 hours = “Action Level” at which a Hearing Conservation Program is required.

## What's happening



- Respiratory Protection Program Revision and Review (August)
- Completion of Hearing Conservation Assessments and Training – (August)
- Hazard Communication Standardization – On Going
- Weapons of Mass Destruction, Basic Awareness Training (4<sup>th</sup> Qrt)
- OSHA 10-Hour Class – For Various City Departments (4<sup>th</sup> Qrt)
- New intranet site for employees dedicated to Environmental, Health and Safety issues: <http://www1.tempe.gov/hpcc/main.htm>
- Confined Space Training:

August 4 - August 10 - August 18 - September 1 - September 29 - October 20 - November 17 - December 15

Schedule classes online with the [ThinQ Training Server](#). Course number WUD600-40-100, Confined Space.

## Do you wear a respirator?



If you wear a respirator you are required to receive medical clearance, be fit tested and be trained, **annually**.

Employers who do not adhere to these requirements place employees at risk and are subject to stiff monetary penalties.

It is estimated to cost the City \$360.00 to medically clear, fit test and train one employee. Monthly inspections of equipment are also a requirement.

To ensure compliance, the City of Tempe developed and implemented a written respiratory protection program.

If you wear or have employees that wear a respirator, please contact Scott Mosley for additional information.

### Note

*Changes in the tuberculosis standard now require any employee who uses an N-95 Mask for protection from TB to be fitted tested and trained annually.*

## I did not know...

Did you know that the statement "[I did not know](#)" is not a defense during an ADOSH inspection.

There are over 1,000 pages in 29 CFR 1910, OSHA Standards for

General Industry (OSHA Training Institute Manual).

How can you possibly know every standard that applies to you? You can't.

If you have a concern or want a safety assessment performed, please contact the EH&S Group and let us assist you.

<http://www1.tempe.gov/hpcc>

## Occupational Fatalities Investigated by ADOSH

October 1, 2003 through December 31, 2003



- A water line undergoing a pressure test exploded killing one worker.
- An employee was electrocuted during an attempt to repair an electric line.
- An employee was crushed when his forklift went off the loading dock.
- An employee was crushed under an automobile when the hydraulic lift was activated.
- The owner of a company was killed when a 10,000 gallon tank exploded during an attempt to purge the tank of residual vapors.
- An employee bled to death after severely lacerating his upper leg with a small grinder that had a wood cutting blade attached.
- An employee was crushed by a wood-framed wall that fell while being lifted in place.
- An employee was crushed by trusses and a load of plywood when trusses collapsed.
- An employee was crushed against a tree by a truck that was moving backwards.

### Need to get in touch with us...

The Environmental, Health and Safety Group is here to assist you in all your safety and hazardous materials needs.

David Tavares	Environmental Hazmat Supervisor	<a href="mailto:david_tavares@tempe.gov">david_tavares@tempe.gov</a>	350-2819
Scott Mosley	Industrial Hygienist	<a href="mailto:scott_mosley@tempe.gov">scott_mosley@tempe.gov</a>	350-8877
John Higuera	Safety and Training Coordinator	<a href="mailto:john_higuera@tempe.gov">john_higuera@tempe.gov</a>	350-2640
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